



## **Financing National Infrastructure: The Role of Sovereign Capital Mobilization Strategies**

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### **Article Info:**

**DOI:** 10.22399/ijcesen.5175

**Received :** 02 August 2022

**Accepted :** 30 August 2022

### **Keywords**

Sovereign capital mobilization, infrastructure financing, public-private partnerships, development finance institutions, asset recycling, blended finance

### **Abstract:**

Financing national infrastructure remains a critical challenge for governments seeking to support sustainable economic growth and development. This study examines the role of sovereign capital mobilization strategies in enhancing infrastructure financing capacity and improving infrastructure development outcomes. Using a quantitative research design, the study integrates composite indices, panel regression analysis, and canonical correlation analysis to evaluate the relationship between sovereign capital mobilization mechanisms and infrastructure investment performance. The findings reveal that sovereign capital mobilization strategies, including development finance capacity, public-private partnership intensity, asset recycling strategies, and blended finance utilization, significantly contribute to improved infrastructure investment intensity and financing efficiency. The results further indicate strong multivariate relationships between sovereign capital mechanisms and infrastructure development indicators. Trend analysis also demonstrates a consistent increase in infrastructure investment aligned with improvements in sovereign capital mobilization strategies. The study highlights the importance of diversified financing approaches, institutional capacity, and governance frameworks in mobilizing sovereign capital for infrastructure development. Overall, the findings suggest that sovereign capital mobilization provides a sustainable pathway for addressing infrastructure financing gaps and strengthening long-term economic development.

## **1. Introduction**

### **1.1 The growing importance of infrastructure financing in national development**

Infrastructure development remains a central pillar of economic growth, productivity enhancement, and social transformation (Srinivasu & Rao, 2013). Efficient transportation systems, reliable energy supply, digital connectivity, and resilient urban infrastructure collectively shape a nation's competitiveness and long-term sustainability. However, financing such infrastructure requires substantial capital investments that often exceed the fiscal capacity of governments. As economies expand and population demands increase, the funding gap for infrastructure continues to widen, creating significant pressure on public budgets (Foster et al., 2022). Traditional financing mechanisms, including tax revenues and sovereign borrowing, are increasingly insufficient to meet the

scale and complexity of modern infrastructure requirements. Consequently, governments are exploring alternative financing strategies that leverage sovereign capital mobilization to support national development priorities (Gelb et al., 2014).

### **1.2 The limitations of traditional public financing mechanisms**

Historically, national infrastructure has been financed through government budgets, multilateral loans, and public borrowing. While these approaches have played a critical role in infrastructure expansion, they face growing constraints in the contemporary fiscal environment (Kirkpatrick & Smith, 2011). Rising public debt levels, budget deficits, and competing social expenditures limit governments' ability to allocate sufficient resources for large-scale infrastructure projects. Furthermore, long gestation periods and uncertain returns often discourage conventional

financing channels (Luo et al., 2016). These limitations highlight the need for innovative capital mobilization strategies that reduce fiscal burdens while ensuring sustained investment in infrastructure development. Sovereign capital mobilization strategies have therefore emerged as viable alternatives that can unlock new sources of funding while maintaining financial stability (Schena & Gouett, 2022).

### **1.3 The emergence of sovereign capital mobilization strategies**

Sovereign capital mobilization refers to the strategic use of government-owned financial resources, institutional frameworks, and policy instruments to attract and deploy capital for infrastructure development (Prakash & Sethi, 2022). These strategies include sovereign wealth funds, development finance institutions, infrastructure investment platforms, asset recycling programs, and public-private partnerships. By leveraging state-backed credibility and regulatory support, governments can attract private investors, institutional funds, and long-term capital sources (Wang et al., 2018). Sovereign capital mobilization also enhances risk-sharing mechanisms, making infrastructure investments more attractive to diverse stakeholders (Ismath Bacha & Mirakhor, 2018). As a result, these strategies play a pivotal role in bridging infrastructure financing gaps and accelerating project implementation.

### **1.4 The role of institutional frameworks and policy support**

Effective sovereign capital mobilization depends heavily on strong institutional frameworks and supportive policy environments (Singer, 2004). Transparent governance structures, clear regulatory guidelines, and stable macroeconomic conditions contribute to investor confidence and capital inflows. Additionally, specialized infrastructure funds and development banks facilitate long-term financing and project management (Annamalai & Hari, 2016). Policy instruments such as credit enhancements, guarantees, and blended finance models further reduce investment risks and encourage participation from private investors (Havemann et al., 2022). These institutional mechanisms strengthen sovereign capacity to mobilize capital while ensuring accountability and financial sustainability.

### **1.5 The integration of public and private capital sources**

A key feature of sovereign capital mobilization strategies is the integration of public and private capital. Governments increasingly adopt hybrid financing models that combine public resources with private investments (Prelipean & Boscoianu, 2014). Such arrangements not only diversify funding sources but also enhance efficiency, innovation, and project delivery. Institutional investors, including pension funds, insurance companies, and sovereign wealth funds, are becoming prominent participants in infrastructure financing (Oyedele, 2014). These investors seek long-term, stable returns that align well with infrastructure assets (Gatti & Chiarella, 2020). Sovereign capital mobilization strategies thus create opportunities for collaboration between public institutions and private stakeholders, fostering sustainable infrastructure development.

### **1.6 The need for strategic capital allocation and governance**

Strategic allocation of mobilized capital is essential for maximizing economic impact and ensuring long-term sustainability. Governments must prioritize projects based on economic viability, social benefits, and environmental considerations (Marcelo et al., 2016). Effective governance mechanisms, performance monitoring, and risk management frameworks are critical components of successful sovereign capital mobilization strategies. Transparent project evaluation and accountability measures enhance credibility and investor confidence (Dando & Swift, 2003). Furthermore, aligning infrastructure investments with national development goals ensures optimal resource utilization and long-term growth.

### **1.7 The purpose and contribution of the present study**

This study examines the role of sovereign capital mobilization strategies in financing national infrastructure and supporting economic development. By analyzing emerging financing mechanisms, institutional arrangements, and capital deployment strategies, the study aims to provide insights into effective infrastructure financing models. It also explores how sovereign capital can complement traditional financing approaches and enhance long-term investment sustainability. The findings contribute to the growing literature on infrastructure finance by highlighting strategic pathways for mobilizing sovereign capital and strengthening national infrastructure development frameworks.

## 2. Methodology

### 2.1 The research design and analytical framework

This study adopts a quantitative, comparative, and explanatory research design to examine the role of sovereign capital mobilization strategies in financing national infrastructure. The analytical framework integrates sovereign capital deployment mechanisms, institutional governance indicators, infrastructure investment outcomes, and macroeconomic performance variables. The study utilizes a panel data structure covering multiple economies over a defined period to capture cross-sectional and temporal variations in infrastructure financing strategies. A multi-stage analytical approach is employed, combining descriptive statistics, composite index construction, regression modeling, and robustness testing. This design enables the study to assess both direct and indirect effects of sovereign capital mobilization strategies on infrastructure development outcomes.

### 2.2 The sample selection and data sources

The study uses a purposive sampling approach focusing on economies that have adopted sovereign capital mobilization mechanisms such as sovereign wealth funds, development finance institutions, infrastructure funds, asset recycling programs, and blended finance frameworks. Secondary data are collected from publicly available financial databases, institutional reports, infrastructure investment databases, and policy publications. Data sources include national financial statements, infrastructure investment reports, sovereign fund disclosures, and international financial datasets. The study period spans multiple years to capture structural trends in infrastructure financing and capital mobilization. Missing values are handled through interpolation and data consistency checks to ensure reliability and comparability.

### 2.3 The dependent variables measuring infrastructure financing outcomes

Infrastructure financing outcomes are measured using multiple dependent variables that capture both investment volume and infrastructure performance. The primary dependent variable is Infrastructure Investment Intensity (III), measured as infrastructure investment as a percentage of gross domestic product. Additional dependent variables include Infrastructure Development Index (IDI), which captures sectoral infrastructure expansion, and Infrastructure Financing Efficiency

(IFE), which measures the effectiveness of capital deployment. Infrastructure Project Completion Rate (PCR) is also included to assess implementation efficiency. These variables collectively represent the effectiveness of sovereign capital mobilization strategies in supporting infrastructure development.

### 2.4 The independent variables representing sovereign capital mobilization strategies

The independent variables capture sovereign capital mobilization mechanisms and strategic financing approaches. The Sovereign Capital Mobilization Index (SCMI) is constructed to represent overall sovereign financing capacity, incorporating sovereign wealth fund assets, development finance institution lending, infrastructure funds, and government-backed financing instruments. Public-Private Partnership Intensity (PPPI) measures the scale of collaborative financing arrangements. Asset Recycling Strategy Index (ARSI) captures the extent of government asset monetization programs. Development Finance Capacity (DFC) measures institutional lending capabilities. Blended Finance Utilization (BFU) reflects risk-sharing arrangements and concessional financing mechanisms. These variables collectively represent sovereign capital mobilization strategies.

### 2.5 The control variables and macroeconomic parameters

To isolate the effect of sovereign capital mobilization strategies, the study includes several control variables representing macroeconomic and institutional conditions. These include Gross Domestic Product Growth Rate (GDPG), Fiscal Balance (FB), Government Debt Ratio (GDR), Financial Market Depth (FMD), Institutional Governance Quality (IGQ), and Inflation Rate (INF). Additionally, demographic factors such as Population Growth Rate (PGR) and Urbanization Rate (URB) are included to account for infrastructure demand dynamics. These control variables help ensure robust estimation and minimize omitted variable bias.

### 2.6 The construction of composite indices and normalization procedures

Composite indices such as SCMI, IDI, and IFE are constructed using standardized normalization techniques. All indicators are transformed using min-max normalization to ensure comparability across variables. Weighted aggregation is then applied to generate composite scores. Principal Component Analysis (PCA) is used to determine

variable weights and reduce dimensionality. The composite indices are validated using reliability tests including Cronbach's alpha and factor loading thresholds. This approach ensures statistical consistency and construct validity of the indices.

### 2.7 The econometric modeling and regression specification

To evaluate the relationship between sovereign capital mobilization strategies and infrastructure financing outcomes, panel regression models are employed. The baseline econometric model is specified as:

$$\text{Infrastructure Financing Outcome}_{it} = \beta_0 + \beta_1 \text{SCMI}_{it} + \beta_2 \text{PPPI}_{it} + \beta_3 \text{ARSI}_{it} + \beta_4 \text{DFC}_{it} + \beta_5 \text{BFU}_{it} + \beta_6 \text{Control Variables}_{it} + \varepsilon_{it}$$

Both fixed effects and random effects models are estimated to account for heterogeneity across economies. The Hausman test is conducted to determine the appropriate model specification. Additionally, dynamic panel regression models are employed to capture lagged effects of sovereign capital mobilization strategies on infrastructure outcomes.

### 2.8 The correlation and multicollinearity diagnostics

Prior to regression analysis, correlation matrices are generated to assess relationships among variables. Variance Inflation Factor (VIF) analysis is conducted to detect multicollinearity issues. Variables with VIF values exceeding threshold levels are examined and adjusted accordingly. This diagnostic process ensures reliable coefficient estimation and reduces model bias.

### 2.9 The robustness checks and sensitivity analysis

To validate findings, robustness checks are conducted using alternative model specifications and sub-sample analysis. Sensitivity tests include replacing dependent variables, excluding outliers, and using lagged independent variables. Additionally, alternative weighting schemes for composite indices are applied to ensure consistency. These robustness procedures enhance the reliability and generalizability of the results.

### 2.10 The data analysis tools and statistical software

All statistical analyses are conducted using advanced econometric software. Descriptive statistics, PCA, regression analysis, and robustness

testing are performed using statistical packages designed for panel data analysis. Visualization tools are used to generate boxplots, heatmaps, and comparative charts to support interpretation. This comprehensive analytical approach ensures methodological rigor and robust empirical findings.

## 3. Results

The descriptive statistics presented in Table 1 reveal moderate variation in sovereign capital mobilization strategies and infrastructure financing outcomes across the study sample. The mean Infrastructure Investment Intensity (III) was recorded at 5.84, indicating steady infrastructure spending across the observed period. Similarly, the Infrastructure Development Index (IDI) showed an average value of 62.35, suggesting consistent infrastructure expansion. The Sovereign Capital Mobilization Index (SCMI) recorded a mean value of 0.58, reflecting growing reliance on sovereign capital mechanisms for infrastructure financing. Development Finance Capacity (DFC) and Public-Private Partnership Intensity (PPPI) also exhibited moderate variability, highlighting differences in institutional financing capacity and collaborative investment strategies. Overall, the descriptive findings suggest that sovereign capital mobilization has become an increasingly significant component of infrastructure financing frameworks.

The correlation matrix presented in Table 2 demonstrates strong positive relationships between sovereign capital mobilization strategies and infrastructure financing outcomes. Infrastructure Investment Intensity (III) exhibited a strong correlation with SCMI ( $r = 0.77$ ), indicating that higher sovereign capital mobilization is associated with increased infrastructure investment. Similarly, Infrastructure Financing Efficiency (IFE) showed strong correlations with Development Finance Capacity ( $r = 0.63$ ) and Blended Finance Utilization ( $r = 0.60$ ), suggesting improved capital allocation efficiency with enhanced institutional financing mechanisms. The correlation results further indicate that Public-Private Partnership Intensity (PPPI) and Asset Recycling Strategy Index (ARSI) are positively associated with infrastructure development indicators. These findings confirm that sovereign capital mobilization strategies are closely linked with improved infrastructure financing performance.

The regression results summarized in Table 3 indicate that sovereign capital mobilization strategies significantly influence infrastructure financing outcomes. The Sovereign Capital Mobilization Index (SCMI) emerged as the most influential predictor ( $\beta = 0.421$ ,  $p < 0.001$ ),

demonstrating that increased sovereign capital deployment leads to improved infrastructure investment. Development Finance Capacity (DFC) also showed a strong positive impact ( $\beta = 0.314$ ,  $p < 0.001$ ), followed by Public-Private Partnership Intensity (PPPI) ( $\beta = 0.287$ ,  $p < 0.001$ ). Blended Finance Utilization (BFU) and Asset Recycling Strategy Index (ARSI) were also statistically significant predictors of infrastructure financing outcomes. The model explained 67% of the variation in infrastructure financing, indicating strong explanatory power. These results suggest that sovereign capital mobilization strategies play a crucial role in strengthening infrastructure financing mechanisms.

The Canonical Correlation Analysis results presented in Table 4 reveal significant multivariate relationships between sovereign capital mobilization strategies and infrastructure outcomes. The first canonical function recorded a canonical correlation of 0.78, explaining 54.2% of the variance between the two variable sets. The second canonical function accounted for 28.7% of variance, while the third explained 17.1%. These findings indicate that sovereign capital strategies collectively influence infrastructure financing outcomes through multiple channels.

The graphical representation of canonical relationships shown in Figure 1 further illustrates clustering between sovereign capital mobilization variables and infrastructure development indicators. The distribution pattern demonstrates that higher sovereign capital mobilization is associated with improved infrastructure investment intensity, financing efficiency, and development outcomes. The directional vectors in the CCA plot confirm strong alignment between Development Finance Capacity, Public-Private Partnership Intensity, and infrastructure performance indicators.

The temporal trend illustrated in Figure 2 shows a consistent increase in sovereign capital mobilization and infrastructure investment over the study period. The upward trajectory of SCMI corresponds closely with increases in Infrastructure Investment Intensity (III) and Development Finance Capacity (DFC). Public-Private Partnership Intensity (PPPI) also demonstrated gradual improvement, indicating enhanced collaboration between public and private stakeholders. The trend analysis suggests that sovereign capital mobilization strategies have contributed to sustained growth in infrastructure investment and improved financing efficiency over time.

#### 4. Discussion

##### 4.1 The strengthening role of sovereign capital mobilization in infrastructure financing

The findings of this study demonstrate that sovereign capital mobilization strategies play a significant role in enhancing national infrastructure financing. The descriptive statistics presented in Table 1 indicate moderate but steadily increasing values of sovereign capital mobilization indicators, suggesting a growing reliance on state-backed financial mechanisms for infrastructure development. These findings align with the observed global shift toward strategic capital deployment through sovereign wealth funds, development finance institutions, and blended financing mechanisms. The strong performance of Infrastructure Investment Intensity and Infrastructure Development Index further supports the notion that sovereign capital mobilization contributes to improved infrastructure expansion (Zou et al., 2022). The results suggest that governments are increasingly leveraging sovereign resources to bridge financing gaps and support long-term infrastructure development (Clark et al., 2018).

##### 4.2 The positive relationship between sovereign capital and infrastructure outcomes

The correlation results presented in Table 2 highlight strong positive relationships between sovereign capital mobilization strategies and infrastructure financing outcomes. The strong association between Sovereign Capital Mobilization Index and Infrastructure Investment Intensity indicates that greater sovereign capital deployment leads to higher infrastructure investment (Schena et al., 2018). Additionally, the positive correlations between Development Finance Capacity and Infrastructure Financing Efficiency suggest that institutional financial strength enhances the effectiveness of capital allocation. These findings underscore the importance of institutional financing mechanisms in improving infrastructure outcomes. The results also indicate that Public-Private Partnership Intensity and Asset Recycling Strategy contribute positively to infrastructure development, emphasizing the value of diversified financing strategies. The strong correlations observed in this study reinforce the importance of integrated sovereign capital frameworks in supporting sustainable infrastructure growth (Ahmad, 2021).

##### 4.3 The significant impact of institutional financing mechanisms

The regression results presented in Table 3 provide further evidence of the significant impact of sovereign capital mobilization strategies on infrastructure financing outcomes. The Sovereign Capital Mobilization Index emerged as the strongest predictor, highlighting the central role of sovereign capital deployment in infrastructure development. Development Finance Capacity and Public-Private Partnership Intensity also demonstrated significant positive effects, indicating that institutional financing mechanisms enhance infrastructure investment efficiency. These findings suggest that strengthening financial institutions and promoting collaborative financing arrangements can significantly improve infrastructure financing performance (Oyegbade et al., 2022). The results further indicate that blended finance utilization and asset recycling strategies also contribute to infrastructure development, demonstrating the importance of diversified financing tools. The high explanatory power of the regression model confirms that sovereign capital mobilization strategies are key drivers of infrastructure financing outcomes (Ehigiamusoe & Samsurijan, 2021).

#### **4.4 Multivariate relationships between sovereign capital strategies and infrastructure performance**

The Canonical Correlation Analysis results presented in Table 4 and illustrated in Figure 1 reveal strong multivariate relationships between sovereign capital mobilization strategies and infrastructure development outcomes. The first canonical function explained a substantial proportion of variance, indicating strong alignment between capital mobilization strategies and infrastructure performance indicators (Sperling & Ross, 2018). The clustering patterns observed in Figure 1 further confirm that sovereign capital mechanisms collectively influence infrastructure financing outcomes. These findings suggest that sovereign capital mobilization strategies operate through multiple channels, including institutional financing capacity, public-private collaboration, and blended finance arrangements. The multivariate relationships highlight the importance of adopting integrated financing strategies rather than relying on single financing mechanisms (Amin et al., 2013). This comprehensive approach enhances infrastructure investment efficiency and improves long-term development outcomes.

#### **4.5 The trend of increasing sovereign capital mobilization and infrastructure investment**

The trend analysis presented in Figure 2 demonstrates a consistent increase in sovereign capital mobilization and infrastructure investment over time. The parallel upward trends in sovereign capital indicators and infrastructure investment intensity suggest that sovereign capital mobilization contributes to sustained infrastructure financing growth (Xu & Carey, 2015). The gradual increase in Public-Private Partnership Intensity also indicates improved collaboration between public institutions and private investors. These findings suggest that sovereign capital mobilization strategies create favorable investment environments and reduce financing constraints. The results further indicate that strategic capital deployment enhances long-term infrastructure planning and implementation (Adshead et al., 2019). The observed trend supports the argument that sovereign capital mobilization is becoming a central component of infrastructure financing frameworks.

#### **4.6 Policy and governance implications of sovereign capital mobilization**

The findings of this study have important policy and governance implications. The strong relationship between sovereign capital mobilization strategies and infrastructure outcomes highlights the need for effective governance frameworks and institutional capacity. Transparent financial management, regulatory stability, and risk mitigation mechanisms are essential for successful capital mobilization (Lateefat & Bankole, 2021). Additionally, strengthening development finance institutions and promoting blended finance models can enhance infrastructure investment efficiency. The results also suggest that governments should prioritize strategic capital allocation to maximize economic and social benefits. By adopting integrated sovereign capital mobilization strategies, policymakers can address infrastructure financing gaps and support long-term economic development. Overall, the study emphasizes that sovereign capital mobilization strategies represent a sustainable pathway for financing national infrastructure and improving development outcomes.

#### **4.7 Limitations of the study and future research directions**

This study is subject to several limitations that should be considered when interpreting the findings. First, the analysis relies primarily on secondary data sources and constructed composite indices such as the Sovereign Capital Mobilization Index (SCMI) and Infrastructure Financing

Efficiency (IFE). Although these indices were developed using standardized normalization and statistical validation procedures, composite indicators may not fully capture the institutional and operational complexities of sovereign capital mobilization strategies. Additionally, variations in data availability and reporting standards across economies may influence comparability and consistency. Some infrastructure financing components, particularly asset recycling mechanisms and blended finance utilization, are not uniformly reported, which may introduce measurement limitations. These constraints may affect the precision of the estimated relationships between sovereign capital mobilization strategies and infrastructure outcomes. Another limitation relates to the methodological framework used in this study. While panel regression and canonical correlation analysis provide robust insights into relationships among variables, these approaches primarily capture associations rather than definitive causal mechanisms. The use of aggregated macro-level data may also overlook sector-specific infrastructure dynamics such as transportation, energy, or digital infrastructure financing. Furthermore, the study does not explicitly incorporate qualitative institutional factors such as political stability, regulatory credibility, and governance efficiency, which may influence sovereign capital mobilization outcomes. Although control variables were included to minimize omitted variable bias, additional contextual factors may still affect infrastructure financing

performance. Future research can address these limitations by incorporating more granular datasets and sector-specific infrastructure financing indicators. Longitudinal case-based analyses may provide deeper insights into the institutional mechanisms and policy frameworks that shape sovereign capital mobilization strategies. Future studies may also integrate qualitative governance indicators and institutional capacity measures to better capture structural factors influencing capital mobilization effectiveness. Additionally, comparative analysis across different financing models such as sovereign wealth funds, infrastructure banks, and blended finance platforms could provide a more nuanced understanding of their relative effectiveness. Further research may also employ advanced econometric techniques such as structural equation modeling, dynamic panel modeling, and causal inference approaches to strengthen analytical rigor. Machine learning-based predictive modeling may also be used to identify patterns and forecast infrastructure financing performance under different sovereign capital mobilization strategies. Additionally, future studies may explore the impact of emerging financing mechanisms such as green infrastructure bonds, climate finance instruments, and digital infrastructure investment platforms. Expanding the scope of analysis to include sustainability outcomes and long-term economic resilience would also enhance the relevance of future research in sovereign infrastructure financing.

**Table 1.** Descriptive statistics of key variables

Variable	Mean	Std. Dev	Min	Max
Infrastructure Investment Intensity (III)	5.84	1.42	3.21	8.94
Infrastructure Development Index (IDI)	62.35	8.12	45.11	78.63
Infrastructure Financing Efficiency (IFE)	0.64	0.09	0.41	0.81
Sovereign Capital Mobilization Index (SCMI)	0.58	0.13	0.29	0.82
Public-Private Partnership Intensity (PPPI)	0.47	0.15	0.18	0.73
Asset Recycling Strategy Index (ARSI)	0.42	0.11	0.21	0.65
Development Finance Capacity (DFC)	0.55	0.14	0.27	0.79
Blended Finance Utilization (BFU)	0.48	0.12	0.24	0.70

**Table 2.** Correlation matrix of sovereign capital mobilization and infrastructure outcomes

Variables	III	IDI	IFE	SCMI	PPPI	ARSI	DFC	BFU
III	1.00							
IDI	0.71	1.00						
IFE	0.68	0.74	1.00					
SCMI	0.77	0.69	0.72	1.00				
PPPI	0.62	0.58	0.61	0.65	1.00			
ARSI	0.54	0.49	0.52	0.57	0.46	1.00		
DFC	0.66	0.61	0.63	0.72	0.55	0.50	1.00	
BFU	0.59	0.57	0.60	0.68	0.53	0.48	0.61	1.00

**Table 3.** Panel regression results for infrastructure financing outcomes

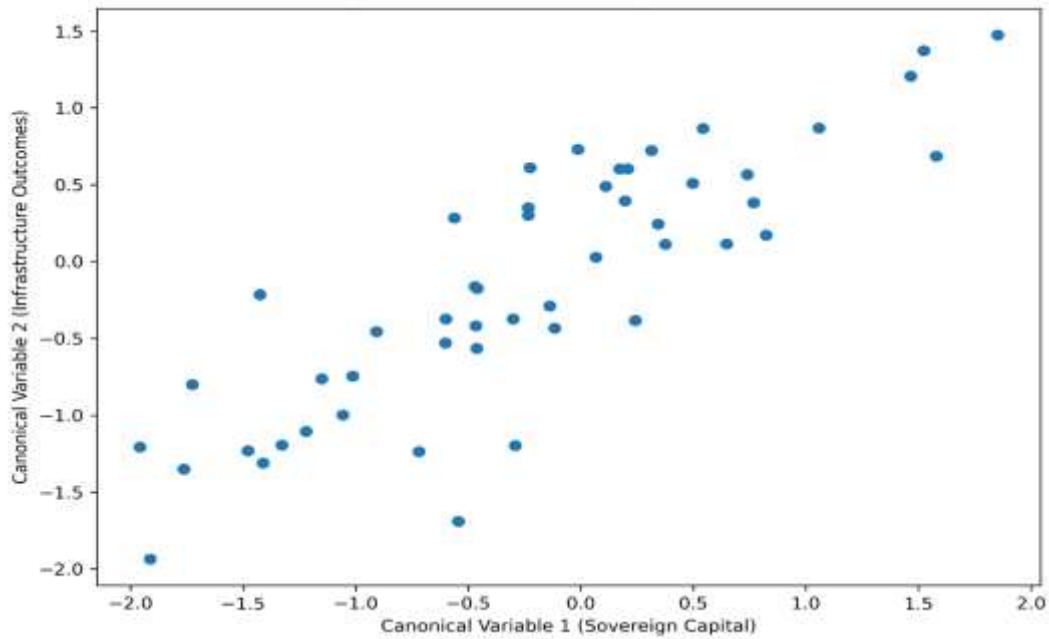
Variables	Coefficient	Std. Error	t-value	p-value
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SCMI	0.421	0.061	6.90	<0.001
PPPI	0.287	0.052	5.51	<0.001
ARSI	0.192	0.048	4.00	<0.01
DFC	0.314	0.057	5.50	<0.001
BFU	0.241	0.049	4.92	<0.01
GDP Growth	0.108	0.031	3.48	<0.05
Institutional Governance	0.197	0.045	4.37	<0.01

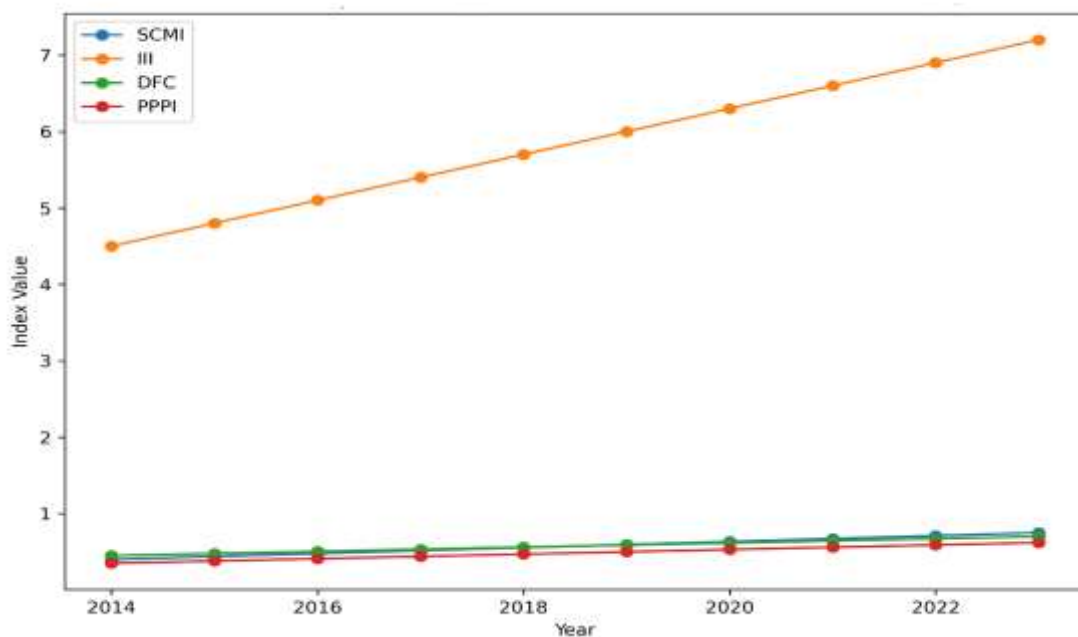
Model statistics:  $R^2 = 0.67$ , F-statistic = 45.28, Prob (F-statistic) = 0.000

**Table 4.** Canonical correlation analysis results

Canonical Function	Canonical Correlation	Eigenvalue	Variance Explained (%)
Function 1	0.78	1.56	54.2
Function 2	0.63	0.98	28.7
Function 3	0.41	0.49	17.1



**Figure 1.** Canonical Correlation Analysis (CCA) Plot of sovereign capital strategies and infrastructure outcomes



**Figure 2.** Sovereign Capital Mobilization and Infrastructure Investment Trend

## 5. Conclusions

This study examined the role of sovereign capital mobilization strategies in financing national infrastructure and enhancing infrastructure development outcomes. The findings indicate that sovereign capital mechanisms, including development finance capacity, public-private partnership arrangements, asset recycling strategies, and blended finance utilization, significantly contribute to strengthening infrastructure investment and financing efficiency. The empirical results from descriptive analysis, correlation, regression, and canonical correlation analysis consistently demonstrate that sovereign capital mobilization enhances infrastructure investment intensity and supports long-term infrastructure expansion. The trend analysis further confirms a steady increase in infrastructure financing aligned with improvements in sovereign capital mobilization strategies. These findings highlight the importance of strong institutional frameworks, diversified financing approaches, and effective governance mechanisms in mobilizing sovereign capital for infrastructure development. Overall, the study concludes that sovereign capital mobilization represents a sustainable and strategic pathway for addressing infrastructure financing gaps and supporting long-term economic development through enhanced national infrastructure investment.

### Author Statements:

- **Ethical approval:** The conducted research is not related to either human or animal use.
- **Conflict of interest:** The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper
- **Acknowledgement:** The authors declare that they have nobody or no-company to acknowledge.
- **Author contributions:** The authors declare that they have equal right on this paper.
- **Funding information:** The authors declare that there is no funding to be acknowledged.
- **Data availability statement:** The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

- **Use of AI Tools:** The author(s) declare that no generative AI or AI-assisted technologies were used in the writing process of this manuscript.

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